

Appl. No. 10/758,822
Amdt. Dated June 29, 2006
Reply to Office Action of May 30, 2006

Docket No. CE11518JGN

Claim Status

Claims 1-6, 8-22, and 24-31 were pending in the application. Claims 1, 11-13, and 24 have been rewritten. Claims 1-6, 8-22, and 24-31 remain in the application, claims 7 and 23 having been previously cancelled.

REMARKS/ARGUMENTS

Claims 1, 3-6, 8-13, 24, and 26-31 were rejected under 35 USC 102(e) over Tanabe et al (US Patent No. 6,902,102), hereinafter "Tanabe."

Claims 2, 14-22, and 25 were rejected under 35 USC 103(a) over Tanabe in view of Kim et al (US Patent No. 6,479,755).

Applicant has amended independent claims 1 and 13 have been rewritten to include the limitation that all of the plurality of components mounted on the printed wiring board are surface mounted on the printed wiring board, as described in the specification on page 8, lines 4-7. A benefit of the invention is that it allows the surface mounting both small, closely spaced components and large components that require the solder joint strength of additional solder. Thus, the invention allows all components to be mounted on the printed wiring board with a single soldering process. Tanabe, conversely, uses both re-flow and flow soldering processes, as described in FIG. 12, and at col. 21, line 25 to col. 23, line 35. Tanabe shows large components such as component 18 being soldered to the printed wiring board using lead-through flow soldering. Applicant's invention avoids this second soldering process while maintaining the desired solder joint strength for large components such as "electrical connectors and shields."

Regarding independent claims 1, 13, and 24, Applicant claims a ratio of solder *paste* thickness, "when applied" of 0.5 or greater. The Rejection contends Tanabe's "fillet" in FIG. 12 shows such a ratio. However, Applicant points out that a fillet is formed when either molten solder is applied to solder the leads of a component to a plated through-hole, or upon reflowing solder paste. What Applicant is claiming is not the same as a solder fillet. Applicant is claiming the ratio of the solder paste thickness when applied to pad spacing. That is, the ratio is concerned with the thickness of the solder paste *before* it is reflowed. The fillet shown in Tanabe is the result of solder having been heated and subsequently cooled. This is a critical distinction

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because Applicant's invention allows the liberal use of solder paste on the pads of very small components without the worry of inter-pad solder shorting so that sufficient solder paste may be applied to provide adequate mechanical support and solder joint strength for large components, as supported at page 11, lines 2-12. Since Tanabe does not describe any ratio of solder *paste* thickness to pad spacing, Tanabe does not, therefore, anticipate each and every claim limitation of any of Applicant's independent claims. As such, Applicant believes all pending claims are allowable over Tanabe or Tanabe taken with Kim.

The Applicants believe that the subject application, as amended, is in condition for allowance. Such action is earnestly solicited by the Applicants.

In the event that the Examiner deems the present application non-allowable, it is requested that the Examiner telephone the Applicant's attorney or agent at the number indicated below so that the prosecution of the present case may be advanced by the clarification of any continuing rejection.

The Commissioner is hereby authorized to charge any fee due, or credit any overpayment, to Motorola, Inc., Deposit Account Number 50-2117.

Respectfully submitted,

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